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INFORMATION REPORT

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SUBJECT Comments on Abstracts from Chinese Journal, Chemical Engineering

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THIS IS UNEVALUATED INFORMATION

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50X1 1. 1953 Vol 2, No 3, 1951 copy of the Chinese journal, Chemical Industry and Engineering.

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The journal has five articles; three are applied, and two are on fundamental research. The practical articles are very ordinary. It appears that Chinese chemical engineers are using chemistry at a working level under local conditions on problems of practical nature.

2. "Preparation of Chlorobenzene." W T Wa, 華 , S P Tang, 唐 , and W C Li, 李 , Huang-hei 黄海 Research Institute for Chemical Industry. The article is in Chinese with English summary.

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Factors controlling the chlorination of benzene are studied. The yield of chlorobenzene decreases and that of dichlorobenzene increases with the increase of reaction temperature; the most suitable temperatures are between 25 - 30°C. Anhydrous $AlCl_3$ plus the residue remained after the fractionation of the reaction mixture is a better catalyst than anhydrous $FeCl_3$ or Fe. The presence of air in the chlorine used has no major effect on the yield of chlorobenzene; the yield decreases by only 2%. Increase of the amount of chlorine used decreases the yield. For instance, at 30°C and with Fe as catalyst, the yields of chlorobenzene, based on the amount of chlorine used, are 70.4%, 67.2% and 62.2% respectively when 0.6 mole, 0.8 mole and 1.0 mole of chlorine are used for each mole of benzene. However, the weight ratio of chlorobenzene to dichlorobenzene is the highest when 0.8 mole chlorine is used for each mole of benzene, and the mole per cent of chlorobenzene (72.9%) in the product is the highest when 1.0 mole of chlorine is used for each mole of benzene.

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3. The Huang-hei research institute is sponsored by two chemical companies, Yung Li, 永 利 , and ? 大 [redacted] these companies are under the same management. Yung Li makes soda, and the other, salt. The original firm was founded in Tientsin in the 1920's to make salt from sea water. It later diversified its activities and produced sodium carbonate and ammonium sulfate. When the Japanese invaded China, the plant moved to Szechwan province. [redacted] one section of the plant has remained in Szechwan while the other may have returned to the coast.

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4. "Study of Sulfur Black." C C Yin, 尹 , W H Yuan, 袁 , and H H Chang, 張 , Department of Chemistry, Shangtung University. The article is in Chinese with English summary. Preparation of sulfur black with a red shade can also be achieved by using dinitrochlorobenzene instead of picric acid. Dinitrochlorobenzene is hydrolyzed with sodium hydroxide and the polysulfide solution is then added to the product. Fixing the polysulfide index at 3.6 but varying the mole ratio of dinitrochlorobenzene to polysulfide, the effective range for color formation is found to be between 1 : 1.59 and 1 : 1.72 and sulfur black with red shade is formed only if the ratio is between 1 : 1.63 and 1 : 1.64. If this ratio is fixed at 1 : 1.58 and 1 : 1.62, the lower limits of polysulfide index for dye formation are 3.9 and 3.1 respectively. In both cases, the intensity of the dye increases with the polysulfide index but the shade is always a green one. The rate of thionation increases with the above ratio, but is not much affected by the change of the polysulfide index. The intensity and the red shade of the dye are antagonistic. To obtain the red shade, the intensity cannot exceed 110%. The obvious interest in dyes is due to their use in coloring cotton goods. Dinitrochlorobenzene is used because picric acid is highly explosive. The authors mention an explosion in their laboratories when handling nitric acid.

5. "Research on Tung Oil. III. Cyclization of Methyl Elaeostearate." T T Chen, 陳 , Tung-tze 同 濟 University, China. The article is in English with Chinese summary. In the presence of H_2SO_4 as a catalyst, β-elaeostearic acid undergoes isomerization and forms a cyclic compound (I). (I) can be transformed into an aromatic compound (II) by bromination followed by dehydrobromination. On oxidation with conc HNO_3 and with $KMnO_4$, (II) yields 3,4-dinitrophthalic acid and phthalic acid respectively. It is concluded that (I) is a derivative of cyclohexadiene.

6. "Research on Tung Oil. IV. Stereochemistry of Elaeostearic Acid." T T Chen. The article is in English with Chinese summary. The products obtained by the addition of maleic anhydride to α and β -elaeostearic acid, after oxidation with $KMnO_4$, yield azelaic acid and n-valeric acid respectively. This indicates that for the α form the addition involves the 11, 14 positions, but not the 9, 12 positions; and that for the β form the 9, 12 positions, but not the 11, 14 positions are involved, probably because of stearic hindrance. Based on interatomic distances and experimental results, it is concluded that the configuration of the α form is Δ^{9}cis Δ^{11} trans Δ^{13} trans and that of the β form is Δ^{9} trans Δ^{11} trans Δ^{13}cis.

7. The above articles on tung oil are representative of good fundamental research. Chen is figuring out the structure of some of the components in tung oil. Since these articles are written in English, it is probable that Chen was educated in the US or the UK. These two articles are a continuation of two earlier articles by Chen which appeared in Chemical Industry and Engineering. Vol 2, No 2, 1951.

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8. The fifth article, titled "Extracts of Soy Bean Oil from Soy Bean Meal" by Shu Kai Liu, 刘 [illegible] was not worth abstracting. The gist of the article was simply that the finer the soy bean meal is crushed, the better the oil. This article was written in Chinese with an English abstract. The author is in the Department of Food Technology in Nanking University.

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